

SECTION 08 4113

ALUMINUM ENTRANCES AND STOREFRONTS

LANL MASTER SPECIFICATION

When editing to suit project, author shall add job-specific requirements and delete only those portions that in no way apply to the activity (e.g., a component that does not apply). To seek a variance from applicable requirements, contact the ESM Architectural POC.

When assembling a specification package, include applicable specifications from all Divisions, especially Division 1, General Requirements.

Delete information within "stars" during editing.

Specification developed for ML-3 projects. For ML-1 / ML-2, additional requirements and QA reviews are required.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Aluminum doors and frames
- B. Vision glass
- C. Door hardware
- D. Perimeter sealant

1.2 SYSTEM DESCRIPTION

- A. Aluminum entrances and storefront system includes tubular aluminum sections [with supplementary internal support framing], shop fabricated, factory finished; vision glass; related flashings, anchorage and attachment devices, and sealant.

1.3 PERFORMANCE REQUIREMENTS

- A. Design and size components to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of wall, to a design pressure of 22 psf measured in accordance with ASTM E330.
- B. Limit mullion deflection to flexure limit of specified glass, with full recovery of glazing materials.
- C. Accommodate, without damage to components or deterioration of seals, movement between system and peripheral construction, dynamic loading and release of loads, and deflection of structural support framing.

- D. Limit air infiltration through assembly to 0.10 cfm, measured at a reference differential pressure across assembly of 6.24 psf as measured in accordance with ASTM 283.
- E. Maintain continuous air barrier and vapor retarder throughout assembly, primarily in line with inside pane of glass and heel bead of glazing compound.
- F. Eliminate water leakage when tested in accordance with ASTM E331 with a test pressure of up to 12 psf.
- G. Provide for expansion and contraction within system components caused by cycling temperature range of 70 degrees F over a 12 hour period without causing detrimental effect to system components and anchorage.
- H. Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to the exterior by a weep drainage network.

1.4 SUBMITTALS

- A. Submit the following in accordance with requirements of Section 01 3300, Submittal Procedures.
 - 1. Catalog data, for each type of product specified, indicating component dimensions, describing components within assembly, anchorage and fasteners, glass, door hardware, and internal drainage details.
 - 2. Calculations or load tables indicating framing member structural and physical characteristics and dimensional limitations.
 - 3. Shop drawings indicating system dimensions, framed opening requirements and tolerances, affected related work, and expansion and contraction joint locations and details.
 - 4. Two samples of at least 6 square inches of aluminum material finish.
 - 5. Manufacturer's standard warranty and ensure forms have been completed in Owner's name and registered with the manufacturer.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with AAMA SFM-1 and AAMA Metal Curtain Wall, Window, Store Front and Entrance - Guide Specifications Manual.
- B. Conform to requirements of ANSI A117.1.
- C. Use products of a single source specializing in manufacturing aluminum glazing systems with minimum of 10 successfully completed projects of similar size and scope as this project.
- D. [Use a Professional Structural Engineer to design supplementary framing components.]

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Do not install sealants when the temperature is less than the manufacturer's recommended minimum temperature for installation and curing.

1.7 WARRANTY

- A. Provide manufacturer's standard warranty that provides correction of defective Work and materials.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Kawneer
- B. United States Aluminum
- C. Vistawall Architectural Products

2.2 MATERIALS

- A. Use extruded aluminum conforming to ASTM B221.
- B. Use sheet aluminum conforming to ASTM B209.
- C. Use steel sections conforming to ASTM A36, shaped to suit mullion sections.
- D. Use stainless steel or galvanized steel fasteners.
- E. Use sealants specified in Section 07 9200, Joint Sealers.

2.3 COMPONENTS

- A. For exterior applications use frame material with 2 by 4 1/2 inch nominal dimensions; thermally broken, with interior tubular section insulated from exterior; flush glazing stops; drainage holes; internal weep drainage system.
- B. For interior applications use frame material 1 3/4 by 4 inch nominal dimension; not thermally broken; flush glazing stops.
- C. For exterior applications of reinforced mullions use standard thermally broken frame with internal steel member reinforcement.
- D. Use doors 1 7/8 inch thick; 3 3/16 inch top rail; 3 1/2 inch vertical stiles; 7 1/2 inch bottom rail; square glazing stops.
- E. Use flashings of aluminum with finish to match mullion sections.

2.4 HARDWARE

- A. Use manufacturer's standard tubular shape pull that coordinates with exit device specified in Section 08 7100.

- B. All other hardware is specified in Section 08 7100, Door Hardware.

2.5 FABRICATION

- A. Fabricate components with minimum clearance and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
- B. Accurately fit and secure joints and corners. Make joints flush, hairline and weatherproof.
- C. Prepare components to receive anchor devices. Fabricate anchors.
- D. Install fasteners and attachments to be concealed from view.
- E. Prepare components with internal reinforcement for door hardware.
- F. Reinforce framing members for imposed loads.

2.6 FINISHES

- A. For exterior exposed aluminum surfaces use dark bronze anodize finish conforming to AA-M12-C22-A44, architectural Class I.
- B. Use concealed steel items galvanized in accordance with ASTM A123 to 2.0 oz/sq ft.
- C. Extent of finish
 - 1. Apply factory finish to all surfaces exposed at completed assemblies.
 - 2. Apply matching finishes to surfaces cut during fabrication, so that no natural aluminum is visible in completed assemblies, including joint edges.
 - 3. Apply touchup materials recommended by finish manufacturer for field application to cut ends and minor damage to factory applied finish.

PART 3 EXECUTION

3.1 INSPECTION

- A. Verify dimensions, tolerances, and methods of attachment with other Work.
- B. Verify wall openings and adjoining air and vapor seal materials are ready to receive Work of this Section.
- C. Apply bituminous paint to concealed aluminum surfaces in contact with cementitious or dissimilar surfaces.

3.2 INSTALLATION

- A. Install wall system in accordance with manufacturer's installation instructions and AAMA - Metal Curtain Wall, Window, Store Front and Entrance - Guide Specifications Manual.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities,
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges, seal to adjacent Work to form water tight dam.
- G. Coordinate attachment and seal of perimeter air and vapor barrier materials.
- H. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- I. Set thresholds in bed of mastic and secure.
- J. Install hardware using templates provided.
- K. Install glass in accordance with Section 08 8000, using glazing method required to achieve performance criteria.
- L. Install perimeter sealant in accordance with Section 07 9200.

3.3 INSTALLATION TOLERANCES

- A. Maximum variation from plumb is 1/16 inch per 10 feet.
- B. Maximum misalignment of two adjoining members abutting in a plane is 1/32 inch.

3.4 ADJUSTING

- A. Adjust operating hardware for smooth operation.

3.5 CLEANING

- A. Remove protective material from frame members.
- B. Wash surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean and dry.

3.6 PROTECTION OF FINISHED WORK

- A. Protect finished work from damage.

END OF SECTION

Do not delete the following reference information:

FOR LANL USE ONLY

This project specification is based on LANL Master Specification 08 4113 Rev. 1, dated September 28, 2006.